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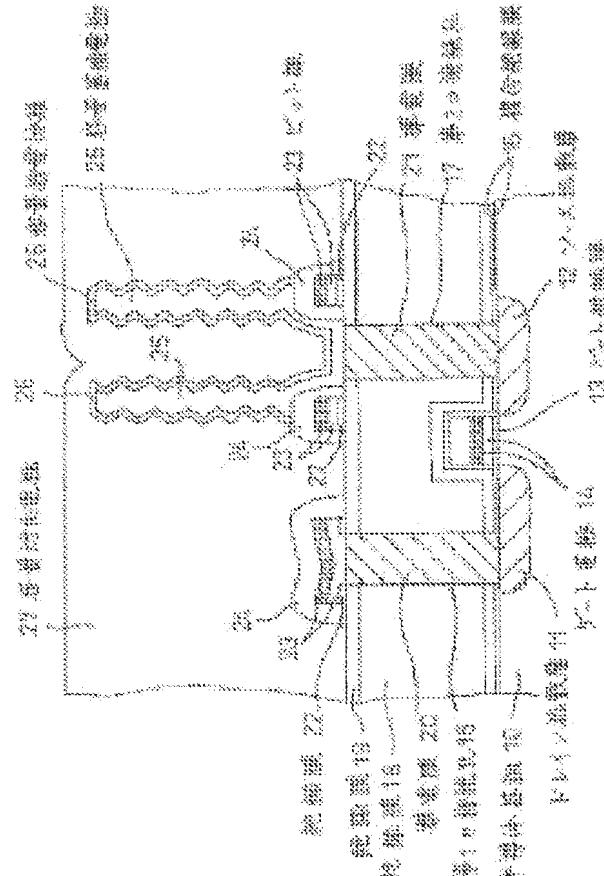
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SEMICONDUCTOR DEVICE AND MANUFACTURE THEREOF

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Abstract of JP 2000101037 (A)

PROBLEM TO BE SOLVED: To enlarge the surface area of a capacitor storage electrode to increase capacitance of a fine-structured and integrated semiconductor device for memory. SOLUTION: As a preparative layer of a capacitor storage electrode 25 formed on a semiconductor device, two or more layers of film, each containing impurity in different density or different material are formed. An aperture is formed by selectively removing a predetermined area of the preparative layer and etching is performed. Due to the different etch rates in the preparative layer, the sidewall surface of the aperture is below-shaped. After a conductive film is deposited on the skewed surface of the aperture to form the capacitor storage electrode 25, the preparative layer is removed. Furthermore, a capacitor dielectric film 26 and a capacitor counter electrode 27 are formed on the capacitor storage electrode 25. Consequently, the surface of the cylindrical capacitor storage electrode 25 is below-shaped without high-temperature heat treatment so that its surface area is enlarged to increase capacitance.



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